

LISTING OF CLAIMS

Claims 1-15.(Canceled)

16. (New) A method of non-contention ranging for re-registering a cable modem with a cable modem termination system on a cable television network following the failure of a communications channel between the cable modem and the cable modem termination system, comprising the steps of:

- (a) storing in the cable modem a first identifier for the cable modem;
- (b) determining that a timeout value for the cable modem has been exceeded;
- (c) reinitializing the cable modem on the cable television network;
- (d) transmitting from the cable modem termination system to the cable modem a data packet containing at least one initial maintenance opportunity having an associated second identifier;
- (e) reading by the cable modem the first of the at least one initial maintenance opportunities;
- (f) determining by the cable modem if the first of the at least one initial maintenance opportunities contains a unicast associated second identifier,
- (g) determining whether the initial maintenance opportunity having the unicast associated second identifier is available for use by the cable modem; and
- (h) when the initial maintenance opportunity having the unicast associated second identifier is available for use by the cable modem, using the initial maintenance opportunity having the unicast associated second identifier for non-contention ranging by the cable modem;

wherein if associated second identifier of the first of the at least one initial maintenance opportunities is not unicast, the cable modem uses the first of the at least one initial maintenance opportunities for standard contention ranging.

17. (New) A method of non-contention ranging for re-registering a cable modem with a cable modem termination system on a cable television network following the failure of a communications channel between the cable modem and the cable modem termination system, comprising the steps of:

- (a) storing in the cable modem a first identifier for the cable modem;
- (b) determining that a timeout value for the cable modem has been exceeded;
- (c) reinitializing the cable modem on the cable television network;
- (d) transmitting from the cable modem termination system to the cable modem a data packet containing at least one initial maintenance opportunity having an associated second identifier;
- (e) reading by the cable modem an associated second identifier for the first of the at least one initial maintenance opportunities; and
- (f) determining by the cable modem if the associated second identifier for the first of the at least one initial maintenance opportunities is unicast,
- (g) determining whether the initial maintenance opportunity having the unicast associated second identifier is available for use by the cable modem; and
- (h) when the initial maintenance opportunity having the unicast associated second identifier is available for use by the cable modem, using the initial maintenance

opportunity having the unicast associated second identifier for non-contention ranging by the cable modem;

wherein if associated second identifier of the first of the at least one initial maintenance opportunities is not unicast, the cable modem uses the first of the at least one initial maintenance opportunities for standard contention ranging.

18. (New) The method of Claim 17 wherein the step of determining by the cable modem whether the initial maintenance opportunity having a unicast associated second identifier is available for use by the cable modem comprises the steps of:

(a) if the associated second identifier for the initial maintenance opportunity is unicast, comparing the associated second identifier for the initial maintenance opportunity with the first identifier stored in the cable modem; and

(b) if the associated second identifier for the initial maintenance opportunity matches the first identifier stored in the cable modem, determining that the initial maintenance opportunity is available for use by the cable modem.

19. (New) The method of Claim 16 wherein if the first of the at least one initial maintenance opportunities is not unicast, repeating steps (e) and (f) for the next initial maintenance opportunity in the plurality of initial maintenance opportunities, wherein if the no initial maintenance opportunity of the at least one initial maintenance opportunities contains an initial maintenance opportunity having a unicast associated second identifier, the cable modem uses one of the at least one initial maintenance opportunities for standard contention ranging.

20. (New) The method of Claim 19 wherein the step of reading by the cable modem the first of the at least one initial maintenance opportunities comprises reading by the cable modem an associated second identifier for the initial maintenance opportunity and wherein the step of determining by the cable modem if the first of the at least one initial maintenance opportunities contains a unicast associated second identifier comprises determining by the cable modem if the associated second identifier for the initial maintenance opportunity is unicast.

21. (New) The method of Claim 20 wherein the step of determining by the cable modem whether the initial maintenance opportunity having a unicast associated second identifier is available for use by the cable modem comprises the steps of:

(a) if the associated second identifier for the initial maintenance opportunity is unicast, comparing the associated second identifier for the initial maintenance opportunity with the first identifier stored in the cable modem; and

(b) if the associated second identifier for the initial maintenance opportunity matches the first identifier stored in the cable modem, determining that the initial maintenance opportunity is available for use by the cable modem.

22. (New) A method of non-contention ranging for re-registering a cable modem with a cable modem termination system on a cable television network following the failure of a communications channel between the cable modem and the cable modem termination system, comprising the steps of:

(a) storing in the cable modem a first identifier for the cable modem;

(b) determining that a timeout value for the cable modem has been exceeded;

(c) reinitializing the cable modem on the cable television network;

(d) transmitting from the cable modem termination system to the cable modem a data packet containing at least one initial maintenance opportunity having an associated second identifier;

(e) reading by the cable modem the first of the at least one initial maintenance opportunities;

(f) determining by the cable modem if the first of the at least one initial maintenance opportunities contains a unicast associated second identifier,

(g) determining whether the initial maintenance opportunity having the unicast associated second identifier is available for use by the cable modem; and

(h) when the initial maintenance opportunity having the unicast associated second identifier is available for use by the cable modem, using the initial maintenance opportunity having the unicast associated second identifier for non-contention ranging by the cable modem;

wherein the data packet containing the at least one initial maintenance opportunities is a bandwidth allocation map comprising a plurality of bandwidth allocation map information elements and wherein the at least one initial maintenance opportunities comprises a non-unicast initial maintenance opportunity and a unicast initial maintenance opportunity having a unicast associated identifier.

23. (New) The method of Claim 22 wherein the non-unicast initial maintenance opportunity is a multicast initial maintenance opportunity.

24. (New) The method of Claim 22 wherein the non-unicast initial maintenance opportunity is a broadcast initial maintenance opportunity.